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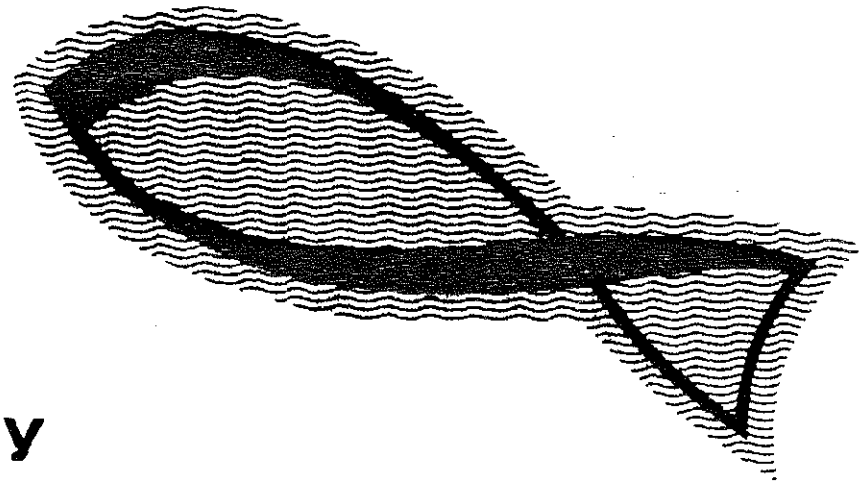
Prospects for the development of the Irish eel fishery



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Prospects for the development of the Irish eel fishery

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It is considered that the lakes and rivers of Ireland (Republic) could be managed to achieve a production of 1,500 tonnes of eel a year. The value of this catch would be £3 million for fresh fish. A fishery with this yield could form a basis for a processing industry and enhanced value. Experience indicates that the current catch, of not more than 150 tonnes per year, does not provide a sufficiently regular supply of fresh eels to maintain a processing operation and consequently the eels are sold only to wholesalers. The poor catch results from inadequate stocks rather than from inefficient methods of capture.

This leaflet gives a description of the eel fishery and its progress in recent years and explains how the stocks can be increased for the future. The special attraction of the proposal is that it offers a means of making a tenfold increase in the yield of one of the most highly priced species of fish without posing any threat to the ultimate survival of the species. The method to be used is the transfer to good feeding grounds of elvers which would otherwise die within months of arrival on our coasts.

Eel production in 1979

Data on the national eel catch are derived from returns furnished by licensed fishermen under the Statistics Acts of 1926 and 1946. The information is supplied to the Department of Fisheries and Forestry and is treated with strict confidence. It may not in any circumstances be

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divulged by the Department to any other body whatever or to any private individual without permission from the fisherman. Unfortunately, about half the licensed eel fishermen never supply their catch figures and therefore it is not possible to prepare a comprehensive report on eel production.

Table 1. Reported eel catch (kg) in 1979 by Fisheries Region

	Long line or baited traps	Summer fyke	Silver eel traps	Total
	Catch	Catch	Catch	Catch
Eastern		1016.	3275	4291
Southern	4603	1465	120	6188
Shannon			45898	45898
Western		1542	20066	21608
North Western			553	553
Northern	2447	4699	227	7373
Total	7050	8722	70139	85911

The Table gives a reliable indication of the relative importance of the various Fisheries Regions. The greatest catch is of silver eels and is made in the Shannon Region, most of it coming from the lakes of the River Shannon, with a smaller proportion from the Fergus and its lakes. The next in rank is the Western Region based on Lough Corrib eels. The other Regional totals are each less than 10 tonnes per year. The catch from the Southern Region includes the fishery using baited traps in the combined estuaries of the Barrow, the Nore and the Suir. The catch for the Northern Region comes from long-lining in the lakes of Cavan and Monaghan.

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The total reported catch for the State in 1979 was 85 tonnes. It is estimated that the actual catch was not more than double this amount. A total of 199 eel fishing licences was issued in 1979. The number of men involved would be higher, since long-liners frequently work in pairs and the larger eel weirs require several workers. With the exception of seven men employed by the Electricity Supply Board (ESB) there are no full-time eel fishermen in the State.

Table 2. Summary of results of commercial fyke net experiments.

	1971	1972	1973	1974	1975	1976	1977	1978	1979	Total
Number of authorisations	2	3	3	3	6	9	14	13	15	68
Number of nets	16	170	170	160	198	232	334	380	343	2003
Number of Fishery Regions	1	1	1	1	3	4	4	3	4	5
Average Catch per net (kg)	70	22	26	21	26	20	40	38	42	29
Average Catch (KG) per Fisherman.	560	1227	456	1121	867	517	966	1103	963	951
Total catch (kg)	1120	3683	4368	3365	5204	4658	13536	14340	14442	64716

Fyke netting

The use of fyke nets for eels is still in its experimental stages. For this reason there is a condition in every statutory authorisation requiring the fishermen to furnish the Department of Fisheries and Forestry with details of his catch and fishing effort. This information is continually being analysed by the Department's scientific staff. The results of the fyke net operation from 1971 and 1979 are shown in Table 2.

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The average catch per fisherman has been of the order of one tonne per year, value about £2,000. The majority of fishermen use a train of twenty nets which allows a worthwhile catch to be made overnight. The current policy is to restrict the number of nets per person to twenty and this principle will be applied unless clear evidence of under exploitation of the stocks becomes available. The use of larger numbers of nets changes the operation from convenient part-time work to full-time work. A full-time fyke net operation would require a large area of water to sustain an economical fishery. In the interests of allowing greater numbers of fishermen to benefit from the catch of eels, the numbers of nets must be restricted.

Eel production in Ireland

The recorded catch of 85 tonnes in 1979 is extremely small when compared with the catch for Northern Ireland which is nearly 1,000 tonnes. The research work on Irish eels over a number of years has been directed towards discovering why the catch in the Republic is so much smaller. This question has now been answered in part. It has been proved beyond doubt that the numbers of eels in the lake and river systems are relatively small. The reason for the small size of the stocks is that the majority of eels congregate in downstream areas and do not migrate into the extensive feeding grounds upstream.

Very good stocks of eels are found in Irish lakes and rivers which have rich water (conductively greater than 125 uS/cm) and an adequate supply of elvers. This is the situation, for example, in the River Barrow which has yielded the highest figures for stock density in freshwater in the course of the national survey of eel stocks. This dense population of eels co-exists with good trout and salmon production. The discovery of this stock confirms the theory that most of the lakes of Ireland could support similarly large stocks of eel without detriment to the interests of other

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fish and fishermen. What is needed is to introduce greater numbers of elvers to these lakes. In the case of the Northern Ireland fisheries, regular management procedure has been to catch elvers close to the sea at Coleraine and transport them overland to Lough Neagh. This has been in progress since the 1930's. The high yield of eels from Lough Neagh is sustained in spite of intense fishing for yellow eels as well as for silvers.

Lough Neagh is the largest lake in Ireland, but its area is similar to that of all the Shannon lakes added together. It should therefore be possible for the Shannon alone to equal the production of Lough Neagh and for the other lakes to increase their production proportionally. Table 3 shows the areas of the major lakes in some of the eel-producing river systems, together with estimated annual catch as a total figure and as catch per hectare.

Table 3. Areas and production of principal lakes in major eel fisheries

	Area (hectares)	Total catch (tonnes)	Catch per hectare (kg)
Lough Neagh	39,626	750	18.9
Shannon lakes	34,623	42	1.2
Lough Corrib	17,000	22	1.3

The areas of water given for the Shannon lakes is an under-estimate, since it is the total of twelve of the largest and omits a number of smaller lakes, to say nothing of the area of the River Shannon itself. The catch for Lough Corrib may be rather exaggerated since it is likely that some eels from Lough Mask and Lough Carra and smaller lakes are caught at Galway. These discrepancies make no difference to the general picture which is that Lough Neagh produces about fifteen times the quantity of eels per hectare produced by the other lakes.

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The supply of elvers to Lough Neagh is known to be about 17 million per year. In 1959 the ESB began to transport elvers to the Shannon Lakes from downstream regions and from 1968 to 1979 the average annual numbers moved were 11.8 million. The numbers of elvers entering Lough Corrib are unknown. Studies of stocks, age and growth of eels have shown that the eel population in Lough Derg has increased dramatically as a result of stocking but that the population in Lough Corrib remains relatively small.

Elvers are supplied to Lough Neagh at the rate of 444 per hectare. This rate is much higher than that in other northern European lakes, and the yield of eels per hectare at Lough Neagh is proportionally greater. This means that the management practice in Lough Neagh is the most effective known in Europe and logically the one to be applied throughout Ireland. Data for area and chemistry of the majority of large Irish lakes have been published by An Foras Forbartha. They list 34 lakes, having conductivity of over 125/uS/cm. The total area of these lakes is 72,223 hectares. If adequately stocked these lakes could yield 1,365 tonnes of eel per year. In terms of 1981 prices the estimated value of this catch would be £2,730,000 and lucrative seasonal employment would be available for abour one thousand fishermen.

A pilot experiment on elver transport to Lough Arrow began in 1979. Glass-eels are caught at the Ballysadare Falls by Mr. Charles Cooper and taken to the lake by the Sligo Fishery Board's staff. The catch at Ballysadare in 1980 was 198 kg, 435,000 eels. In addition 37 kg, 81,000 eels, from the Salmon Research Trust's Burrishoole Fishery were transplanted. This gave a total stocking of 516,000 eels for the lake, a rate of 413 per hectare. This figure approaches reasonably closely to the target of 444 per hectare. Experimental fyke netting will take place regularly in Lough Arrow to monitor the development of the eel stocks.

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The plan for stocking is based on a combination of research work in the field and a study of eel management in other countries. The basic requirement is to find a source of 13 tonnes of elvers per year. It is not certain that this yield can be obtained from Irish sources and it may be necessary to purchase supplies from England or from the Continent. Before this can be considered it will be necessary to make a study of the possible risk of importing pathogens which are not already present in the country. Whatever steps may eventually be taken there will be a delay of nearly twenty years before the full yield from an extensive stocking programme may be attained. In the meantime ways and means of improving the fishery within the existing framework are being actively pursued.